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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,144	06/25/2003	Vincent J. Zimmer	20002/16809	3965

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EXAMINER	
LASHLEY, LAUREL L	
ART UNIT	**PAPER NUMBER**
2132	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/606,144	ZIMMER ET AL.	
	Examiner	Art Unit	
	Laurel Lashley	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments that Patel does not expressly suggest every claim element such as password routine being digitally signed using a private key, authenticating the password routine using a public key associated with the private key, storing a password routine or a memory management unit with respect to the rejection(s) of claim(s) 1 - 28 under 102(b) as anticipated by Patel have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made, therefore Applicant's arguments are moot.

Therefore claims 1 –28 are still pending and have been examined.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 08/18/06 was filed before the mailing date of the any of a final Office action under § 1.113. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 11, 23, 26 - 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou et al. in US Patent No. 5892906 (hereinafter US '906) further in view of England et al in US Patent No. 6327652 (hereinafter US '652), Patel in US Patent No. 6327660 (hereinafter US '660) and Zitlaw et al. in US PGPub No. 20040128425 (hereinafter US PGPub '425).

4. For claim 1 similar claim 26, US '906 discloses:

A method of receiving a password, the method comprising:

receiving a password routine, *(see Abstract; column 3, lines 25 – 28; column 4, lines 1 – 4; column 5, lines 9 – 13: security function determines password authentication in BIOS routine)*

storing the password routine, unavailability of data (*see column 7, lines 53 - 55*) *and*

executing the password routine in a pre-boot environment to receive the password (*see column 4, lines 1 -4*),

but does not expressly disclose the password routine being digitally signed using a private key, authenticating the password routine using a public key associated with the private key, or a first area of a memory device, the first area of the memory device being unavailable to a memory management unit, the memory device including a second area, the second area being available to the memory management unit.

England however does disclose the password routine being digitally signed using a private key (*see column 14, lines 60 – 61: boot code signed*), and

authenticating the password routine using a public key associated with the private key (see *column 14, lines 66 – 67: public key used to validate signature*) but does not expressly disclose a first area of a memory device, the first area of the memory device being unavailable to a memory management unit, the memory device including a second area, the second area being available to the memory management unit.

Patel however does disclose a first area of a memory device, the first area of the memory device being unavailable and, the memory device including a second area, the second area being available (*see column 3, lines 35 – 39 and 47 - 48: first and second electronic systems equivalent to first and second memory areas; operational state (i.e. fully and not fully)*

is equivalent to availability state) but does not expressly disclose the unavailability and availability to a memory management unit.

Zitlaw et al. however does expressly disclose a memory management unit (see page 2, [0008], lines 3 – 4; Figure 1B: memory controller).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the method of receiving a password routine of Chou et al. such that it would be digitally signed and authenticated as in England et al. to include a first and second memory areas (first and second electronic systems) of Patel such that it would limit the availability to the memory management unit as in Zitlaw et al. The motivation for doing so would have been to protect password entry and authentication from authorized disclosure/access in a pre-boot environment.

For claim 2, US '906 teaches:

A method as defined in claim 1, further comprising executing a non-trusted device driver in the pre-boot environment. (see column 3, lines 33 – 35 and 60 - 62)

For claim 3, US '906 teaches:

A method as defined in claim 2, wherein the non-trusted device driver is only executed if the password matches a password stored (see column 4, lines 17 - 19) but does not expressly disclose storing the password in a first area of the memory device.

Patel however does disclose a first area of a memory device (*see column 3, lines 35 – 39 and 47 - 48: first electronic system).*

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the method of receiving a password as in Chou et al. to include a first electronic system of Patel. The motivation for doing so would have been to provide a secure memory area to facilitate password authentication.

For claim 4, US '906 discloses a non-trusted device driver (*see column 3, lines 33 - 35*) but does not expressly disclose storing in the second area of the memory device.

Patel however does disclose a second area of the memory device (*see column 3, lines 35 – 39 and 47-48: second electronic system).*

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the method of receiving a password of Chou et al. to include a second electronic system of Patel. The motivation for doing so would have been to provide a non-secure memory area to facilitate password entry.

For claim 5, US '906 discloses:

A method as defined in claim 1, wherein executing the password routine comprises executing the password routine using a processor in a secure mode, the secure mode being a hardware feature of the processor *(see column 3, lines 52 – 62: operating system not loaded)*.

For claim 6, US '906 teaches:

A method as defined in claim 5, wherein the secure mode limits the use of input hardware. *(see column 3, lines 60 – 62; column 4, lines 18 -19: access dependent on match or mismatch)*

For claim 7, US '906 teaches:

A method as defined in claim 6, wherein the secure mode limits the use of output hardware. *(see column 3, lines 60 – 62; column 4, lines 18 -19: access dependent on match or mismatch)*

For claim 8, US '906 teaches:

A method as defined in claim 1, wherein the password routine calls a trusted graphics routine, the trusted graphics routine being digitally signed. *(see column 3, lines 35 – 36; column 6, lines 63-64: private/public key pair; column 7, lines 52 – 60: prompt)*

For claim 9, US '906 discloses:

A method as defined in claim 8, wherein the trusted graphics routine calls a trusted display

driver, the trusted display driver being digitally signed. *(see column 3, lines 35 – 36: monitor; column 6, lines 63-64: private/public key pair)*

For claim 10, US '906 discloses:

A method as defined in claim 1, wherein the password routine calls a trusted keyboard driver, the trusted keyboard driver being digitally signed. *(see column 3, lines 35 – 36: monitor; column 6, lines 63 - 64: private/public key pair)*

For claim 11, US '906 discloses:

A method as defined in claim 1, wherein the password comprises a basic input output system (BIOS) password. *(see column 1, line 57: BIOS device)*

For claim 23, US '906 discloses:

An apparatus as defined in claim 22, wherein the keyboard driver, the display driver and the graphics routine each authenticated using a digital signature (see column 3, lines 35 – 36; column 6, lines 63 – 64; column 7, lines 52 - 60) but does not expressly disclose the password collection routine authenticated using a digital signature.

England however does disclose the password collection routine authenticated using a digital signature (see *column 14, lines 66 – 67: public key used to validate signature*).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the apparatus as defined in claim 22, such that the password collection routine of Chou et al. would be authenticated using a digital signature as in England et al. The motivation for doing so would have been to protect password entry and authentication from authorized disclosure/access in a pre-boot environment.

For claim 27, US '906 teaches:

A machine readable medium as defined in claim 26, wherein the instructions are structured to cause the machine to executing a non-trusted software routine in the pre-boot environment, the

non-trusted software routine being stored (see column 3, lines 33 - 35) but does not expressly disclose a second area of the memory device.

Patel however does disclose a second area of the memory device (*see column 3, lines 35 – 39: second electronic system).*

At the time of the invention it would have been obvious to a person skilled in the art to modify the machine readable medium of Chou et al. to include a second area of a memory device as in Patel. The motivation for doing so would have been to provide a non-secure memory area to facilitate password entry.

For claim 28, US '906 teaches:

A machine readable medium as defined in claim 27, wherein the non-trusted software routine comprises a legacy driver. (see column 3, line 45)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 12 – 22, 24 - 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou et al. in US Patent No. 5892906 (hereinafter US '906) further in view of Patel in US Patent No. 6327660 (hereinafter US '660) and Zitlaw et al. in US PGPub No. 20040128425 (hereinafter US PGPub '425).

6. For claim 12 and similar claim 22, US '906 teaches:

An apparatus to execute a trusted software program in a pre-boot environment, the apparatus comprising: (see Abstract; Figure 1 and associated text)

a memory device (see column 3, lines 31 - 32) and

a processor operatively coupled to the memory device, the processor to execute the trusted software program in the pre-boot environment (see Figure 1: item 10 and associated text)

but does not expressly disclose a first area of a memory device, the first area of the memory device being unavailable to a memory management unit, the memory device including a second area, the second area being available to the memory management unit.

Patel however does disclose a first area of a memory device, the first area of the memory device being unavailable and the memory device including a second area, the second area being available (see column 3, lines 35 – 39 and 47 – 48) but does not expressly disclose a memory management unit.

Zitlaw et al. however does expressly disclose a memory management unit (see page 2, [0008], lines 3 – 4; Figure 1B: memory controller).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the method of receiving a password of Chou et al. to include a first and second memory areas (first and second electronic systems) of Patel such that it would be limit the availability to the memory management unit as in Zitlaw et al. The motivation for doing so would have been to protect password entry and authentication from authorized disclosure/access in a pre-boot environment.

For claim 13, US '906 discloses:

An apparatus as defined in claim 12, further comprising a non-trusted software program (see column 3, lines 33 - 35) but does not disclose a second memory portion.

Patel however does disclose a second memory portion (*see column 3, lines 35 – 39: second electronic system).*

At the time of the invention it would have been obvious to a person skilled in the art to modify the apparatus of Chou et al. to include a second memory location as in Patel. The motivation for doing so would have been to provide a non-secure memory area to facilitate password entry.

For claim 14, US '906 teaches:

An apparatus as defined in claim 13, wherein the processor executes the non-trusted software program in the pre-boot environment. (see column 3, lines 33 – 35 and 60 - 62)

For claim 15, US '906 teaches:

An apparatus as defined in claim 12, wherein the trusted software program comprises a hardware driver. (see Figure 1, item 10)

For claim 16, US '906 discloses:

An apparatus as defined in claim 15, wherein the hardware driver comprises a keyboard driver. (see column 3, lines 35 – 36: keyboard)

For claim 17, US '906 discloses:

An apparatus as defined in claim 15, wherein the hardware driver comprises a display driver. (see column 3, lines 35 – 36: monitor)

For claim 18, US '906 teaches:

An apparatus as defined in claim 12, wherein the trusted software program comprises a graphical user interface display routine. (see column 3, lines 35 – 36; column 7, lines 52 – 60: "prompt")

For claim 19, US '906 teaches:

An apparatus as defined in claim 12, wherein the trusted software program comprises a password collection routine. (see Abstract; Figure 1 and column 4, lines 1 - 5: security routine)

For claim 20, and similar claim 24 US '906 discloses:

An apparatus as defined in claim 12, wherein the processor includes a secure mode that limits the use of input hardware and output hardware connected to the processor. (see column 3, lines 60-62: access dependent on match or mismatch)

For claim 21, US '906 teaches:

An apparatus as defined in claim 20, wherein the processor executes the trusted software program in the pre-boot environment while the processor is in the secure mode. (see column 3, lines 52 -62)

For claim 25, US '906 discloses:

An apparatus as defined in claim 24, wherein the processor executes the keyboard driver, the display driver, the graphics routine, and the password collection routine in the pre-boot environment while the processor is in the secure mode. (see column 3, lines 35 – 36 and 52 – 62; column 7, lines 52 - 60)

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel Lashley whose telephone number is 571-272-0693. The examiner can normally be reached on Monday - Thursday, alt Fridays btw 7:30 am & 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron, Jr. can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laurel Lashley
Examiner
Art Unit 2132

01 March 2007

LLL

Benjamin E. Lanier
Examiner AU 2132